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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,783	08/11/2000	Hidefumi Yamashita	13783 (JP9-1999-0150 US1)	8476

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EXAMINER

NGUYEN, HOAN C

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/636,783	YAMASHITA ET AL.	
	Examiner	Art Unit	
	HOAN C. NGUYEN	2871	

PK

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1,4-11,13 and 14 is/are pending in the application.

4a) Of the above claim(s) 2,3 and 12 is/are withdrawn from consideration.

5) ☐ Claim(s) ____ is/are allowed.

6) ☒ Claim(s) 1,4-11,13 and 14 is/are rejected.

7) ☐ Claim(s) ____ is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/27/2003 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4, 5 and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Colgan et al. (US5831710A) from applicant's IDS.

In regard to claims 1, 4-5 and 7, Colgan et al. teach (Figs. 2 and 6-7) a liquid crystal display device which has first and second substrates disposed with a predetermined gap, and seals a liquid crystal in the gap, comprising:

- a seal member (adhesive 52) provided at the gap between said first and second substrates (substrate 40 and cover 50), said seal member being disposed outside a display area to seal said liquid crystal 53;
- a wall-like structure (barrier 25) disposed outside the display area and inside the seal member, said wall-like structure being made of a different material from that of said seal member and formed in plural rows (col. 5, lines 18-23); said wall-like structure is composed of dashed rows such that the notches in one row of said plural wall-like structures are always offset relative to the notches in another row of said wall-like structures along the lengths of said wall-like structure so that said seal material does not flow directly into said display area from exteriorly of said wall-like structures; said notches of said wall-like structure are formed alternately or offset in the plurality of dashed rows so that said seal material does not flow directly into said display area (col. 5, lines 18-23).

wherein (Figs. 2 and 7)

- a column-like structure for keeping the gap between said first and second substrates constant is provided, and a shape of said wall-like structure is determined based on a state of said column-like structure in regard to claim 4.
- positions of the notches of the plural dashed rows in said wall-like structure are determined based on a position of a wiring formed either on said first substrate or on said second substrate (Fig. 7) in regard to claim 5.
- A wall-like structure comprising a plurality of parallel rows of staggered notched walls disposed outside said display area and inside said seal

member, said wall-like structure being for preventing said seal member from flowing into said display area in regard to claim 7.

In regard to claim 8, Colgan et al. teach (Figs. 2-7) a liquid crystal display device, wherein said seal member flows out in a fluidized state when said second substrate is pressed into said first substrate while heating said first and second substrates, and said wall-like structure is capable of stopping said seal member from entering said display area, through said staggered notched walls 25 as shown in Figs. 2 and 7, said seal member being in a fluidized state, and permitting said liquid crystal to flow into outside the wall-like structure when said liquid crystal flows out from said display area. This is conventional technique of sealing the seal member and injecting the liquid crystal materials.

In regard to claim 9, Colgan et al. teach (Figs. 2-7) the liquid crystal display device, wherein said wall-like structure prevents air traps from occurring when said liquid crystal to be sealed flows into said display area by forming the meniscus of the liquid crystal material.

In regard to claim 10, Colgan et al. teach (Figs. 2-7) the liquid crystal display device comprising the steps of

- applying resin onto a first substrate, and patterning said resin to form a frame-shaped wall-like structure surrounding a display electrode; said wall like

structure takes a frame-shaped structure composed of a plurality of rows, each row showing a dashed line shape have predetermined notches 25 (Figs. 2 and 7) in staggered offset relationship to each other such that the notches in one row of said plural wall-like structures are always offset relative to the notches in another row of said wall-like structures along the lengths of said well-like structure so as to inhibit flow of said seal member therethrough toward said liquid crystal;

- arranging a second substrate so as, to face said first substrate on which said seal member is applied,
- pressing said second substrates to each other by said seal material as prior art disclosed in Fig. 1 (col. 3, lines 15-17);
- injecting a liquid crystal into a gap between said first and second substrates, which are adhered to each other. This is well known prior art.

wherein

- a column like structure for regulating a size of the gap between said first and second substrates is formed together with said wall-like structure by patterning according to claim 11;

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan et al. (US5831710A) from applicant's IDS.

In regard to claim 13, it is well-known art that said wall like structure is formed by applying photosensitive resin onto said first substrate, performing a UV exposure for the resin using a photomask to pattern the wall-like structure, and curing the resin to harden the resin.

In regard to claim 14, it is well-known art that an alignment film is applied after the formation of said wall-like structure for regulating orientation the liquid crystal molecules.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Colgan et al. disclosed with (a) wall like structure formed by applying photosensitive resin onto said first substrate, performing a UV exposure for the resin using a photomask to pattern the wall-like structure, and curing the resin to harden the resin (claim 13); an alignment film applied after the formation of said wall-like structure for regulating orientation the liquid crystal molecules (claim 14).

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2. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan et al. (US5831710A) as applied to claim 1, in view of Haven (EP0113064A1) from applicant's IDS.

Haven teaches (Figs. 2 and 6) a liquid crystal display device, wherein said wall-like structure (a raised ledge 53) is formed to a height lower than that of the gap formed between said first substrate and said second substrate for reducing the meniscus of the liquid crystal material.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Colgan et al. disclosed with the wall-like structure formed to a height lower than that of the gap formed between said first substrate and said second substrate for reducing the meniscus of the liquid crystal material.

Response to Arguments

Applicant's arguments filed on Feb. 27, 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

Colgan et al. fail to disclose the plurality of walls, which have notches always offset relative to each other so as prevent the direct ingress of sealing material towards the display.

Examiner's responses to Applicants' ONLY arguments are follows:

Colgan et al. disclose (Fig. 7) the plurality of walls 25, which have notches always offset relative to each other so as prevent the direct ingress of sealing material towards the display (col.5 lines 37-41).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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March 24, 2003

TOANTON
PRIMARY EXAMINER